Wireless LAN Infrastructure

At-a-Glance

Motorola wireless LAN infrastructure

The global one-stop RF shop — enabling an end-to-end wireless LAN with the industry's most comprehensive wireless portfolio

Motorola's comprehensive wireless LAN portfolio is packed with innovative features and functionality that set the bar for wireless LAN infrastructure — enabling the truly wireless enterprise. Motorola offers the only portfolio capable of providing the seamless indoor and outdoor coverage you need to extend your network to literally every inch of your facility — inside your four walls, out in the yard, between buildings and in the expansive outdoor areas common in oil and gas, education and other industries. Our unmatched reliability and gap-free security provide dependable and secure wireless access to the data, voice and video services required to streamline your business — and improve customer service. And you can count on a superior ROI — our products not only provide the most features for your investment dollars, but also dramatically reduce IT management time.

Gap-free security

You can count on Motorola to keep your network resources and your data secure every minute of every day. Motorola's innovative security features help keep your wireless infrastructure as secure as your wired infrastructure. Features include an integrated role-based wired and wireless firewall capable of stopping attacks at Layer 2 and Layer 3, AAA RADIUS Server, VPN and the best-in-class AirDefense WLAN security and network management solutions, so you're assured of FIPS and EAL-validated around-the-clock security for PCI, SOX and HIPAA compliance. The result is true gap-free security — for real wireless peace of mind.

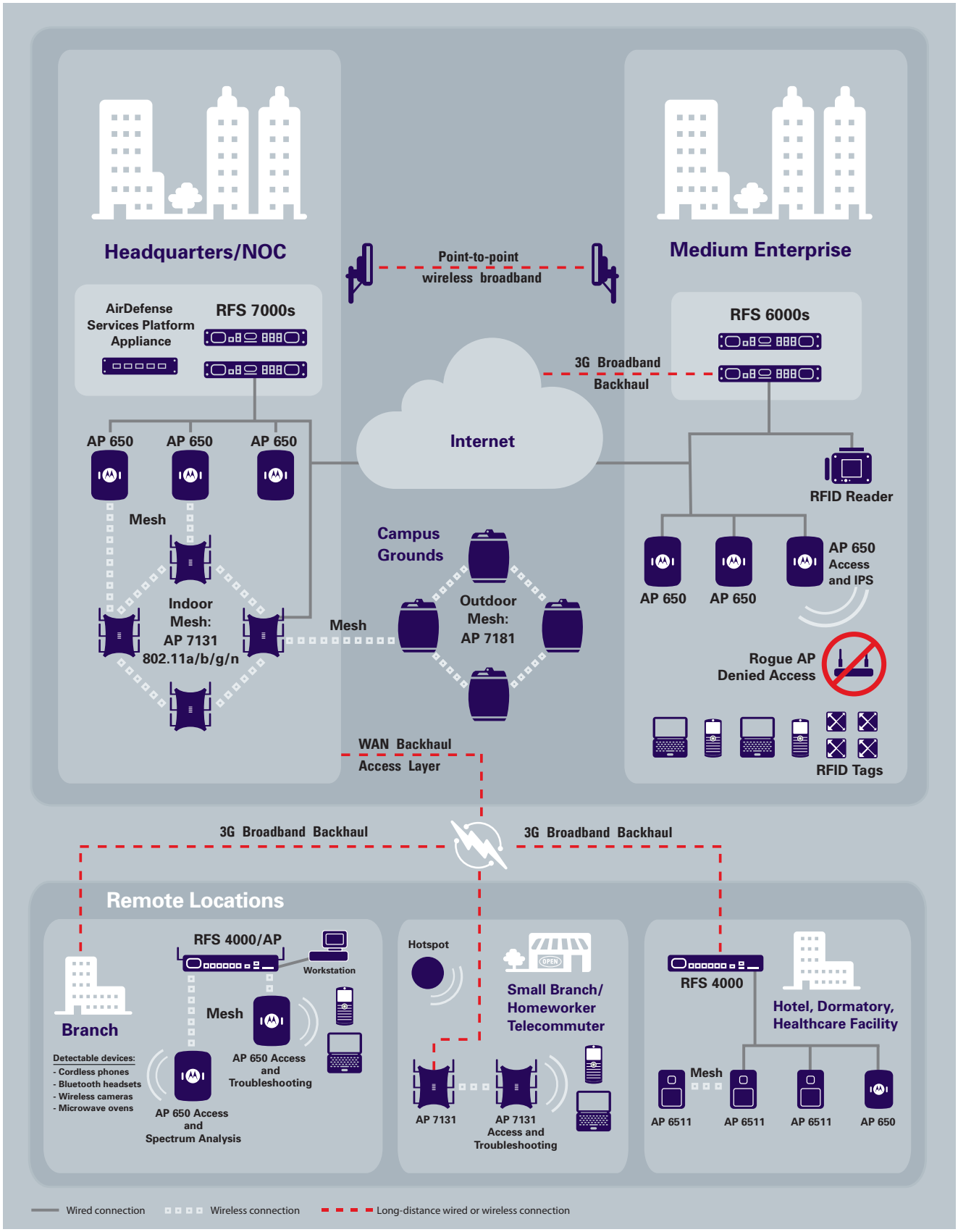
Unmatched reliability

Your wireless network enables business critical communications — you need resilience you can count on. Motorola wireless LANs are loaded with features that deliver unmatched reliability, providing a wireless connection that is every bit as dependable as your wired connections. Adaptive APs intelligently adapt to the ever-changing RF environment without intensive IT monitoring, automatically routing traffic around failures to ensure uninterrupted toll-quality application access. SMART RF automatically adjusts power and channels as needed to maintain a high quality and consistent connection. And with a unique clustering architecture, Motorola's wireless switch controllers can be deployed with 1:N redundancy, providing network-wide virtual support for all your access points.

Best ROI...and lowest TCO

Motorola wireless networks are second-to-none in features and quality, with sensible pricing that ensures an exceptional return on investment. While every wireless vendor claims low TCO, Motorola delivers proven full-featured, best-in-class networks for far less capital and day-to-day operational costs. Our standard feature set includes advanced functionality, such as mesh, high-availability and clustering as well as locationing and RFID engines — features that are often optional on competitive products. There are no access point or feature licenses — simply put, when you buy our products, you have the right to use all the integrated functionality. Motorola wireless LANs set the bar for ease of implementation and operation. The Network Assurance Solution further reduces support costs by eliminating up to 70 percent of on-site repair-related visits. And our dual-purpose access points provide wireless traffic and dedicated dual-band sensing, eliminating the need to purchase and manage a separate dedicated sensing infrastructure for a greener and more cost-effective approach to 24x7 security.

Scalable enterprise wireless infrastructure



Motorola's family of enterprise WLAN and wireless broadband infrastructure easily scales to meet the needs of any enterprise. Extend cost-effective wireless voice and data throughout your literal and virtual environment with this diverse portfolio — from large enterprise campus environments to mid-size and smaller remote sites.

The Motorola WLAN portfolio

Motorola's comprehensive integrated portfolio of wireless products is designed to meet virtually any wireless networking need. Unlike typical point solutions, Motorola's portfolio offers everything required to enable an end-to-end wireless enterprise, including wireless LAN infrastructure, mesh, point-to-point and point-to multipoint bridges, wireless IPS and Voice-over-WLAN solutions — all with the proven interoperability required to simplify and reduce the cost of your mobility deployments.

Our indoor WLAN portfolio includes:

- **Wireless Controller — delivering the most features for one price.** Motorola's wireless LAN controllers provide wireless network control, scalability, security, and reliability for deployments of any size — from small offices to the largest distributed global enterprises.

- **Indoor and outdoor wireless access points — offering high performance adaptive technology and mesh networking.** Motorola wireless access points provide a self-contained "network-in-a-box" that manages wireless traffic between users, access points and wireless controllers. And our powerful adaptive access points enables a Motorola wireless controller to adopt Motorola access points, providing the best of both worlds — the ease of centralized and remote management as well as the ability to deliver uninterrupted wireless service in the event of a WAN link outage.

- **Best-in-class security.** The industry-leading Motorola AirDefense™ WLAN security and network management solutions detect and neutralize any threat, including intruders and rogue devices, while enhancing Motorola's integrated stateful Wireless (Layer 2-7) Firewall, VPN, AAA, and geofencing technologies. Four-factor access control includes identity, role, location, and policy compliance. The AirDefense Solution is vendor agnostic and will also provides security for any wireless LAN infrastructure.

- **Simplified Multivendor Network Management.** The AirDefense Infrastructure Management solution makes it easy for IT to offer excellent wireless network services from a single integrated dashboard for diverse wireless network architectures with multiple generations from different vendors.

- **Great User Experience.** Motorola's network constantly tunes itself to assure top quality performance, but when interference and other wired network obstructions disrupt users the AirDefense Network Assurance Solution enables the helpdesk to quickly and easily identify the root cause – even if its a wired network switch, firewall, or application server. In fact, Network Assurance usually finds problems before they affect the users for fast resolution.

A leader in the wireless industry for over 80 years, Motorola offers one of the most market-proven and customer tested wireless portfolios on the market — with over a billion dollars a day transacted over Motorola WLAN infrastructures around the world.

Motorola's wireless LAN portfolio

Wireless Controllers

	RFS 7000 Wireless Services Controller	RFS 6000 Wireless Services Controller
Product Overview	The RFS 7000 delivers unmatched performance, security, resiliency, scalability and manageability for the large wireless enterprise/campus/warehouse, providing a single platform capable of delivering carrier-grade wireless voice and data for 8,000-96,000 users. Motorola's Wireless Next Generation (Wi-NG) architecture improves operational efficiency and reduces the cost of mobility with a powerful comprehensive feature set that includes adaptive APs, Wi-Fi, RFID, seamless roaming, self-healing, gap-free layered security, rich locationing services, 802.11n with MESH, centralized management and more.	The RFS 6000 provides a single platform capable of delivering carrier-grade wireless voice and data inside and outside the enterprise for medium to large organizations with 2,000-20,000 users. Improve operational efficiency and reduce the cost of mobility with a powerful comprehensive feature set including adaptive AP, that delivers unmatched performance, security, resiliency and scalability. Built on Motorola's Wireless Next Generation (Wi-NG) architecture, the RFS 6000 supports adaptive APs, Wi-Fi, RFID, seamless roaming, self-healing, 3G/4G wireless broadband backhaul, gap-free layered security, rich locationing services, 802.11n with MESH, centralized management and more.
General Characteristics	• Supports 256 802.11a/b/g/n dual radio access points per controller and 3,072 per cluster • Supports up to 1,024 802.11a/b/g/n adaptive access points per controller and 12,000+ per cluster • Supports up to 256 WLANs • Supports up to 8,000 users per controller; 96,000 users per cluster • PCI/HIPAA/SOX capable out-of-the-box	• Supports 48 802.11a/b/g/n dual radio access points per controller and 576 per cluster • Supports up to 256 802.11a/b/g/n adaptive access points per controller and 3.072 per cluster • Supports up to 32 WLANs • Supports up to 2,000 users per controller; 20,000 users per cluster • ExpressCard™ slot for redundant broadband wireless connection & PoE+ Switching • PCI/HIPAA/SOX capable out-of-the-box
Gap-free Security		
Authentication	Access Control Lists (ACLS); pre-shared keys (PSK); 802.1x/EAP—transport layer security (TLS), tunneled transport layer security (TTLS), protected EAP (PEAP); Kerberos Integrated AAA/RADIUS server with native support for EAP-TTLS, EAP-PEAP (includes a built in user name/password database; supports LDAP) and EAP-SIM*	
Encryption	WEP 40M28 (RC4); KeyGuard; WPA-TKIP; WPA2-CCMP (AES); 802.11i WPA2	
IDS/IPS	Multi-mode rogue AP detection; rogue AP containment; 802.11n rogue detection*; ad-hoc network detection*; Denial of Service protection against wireless attacks; client blacklisting; anomaly analysis engine; Wired IPS**	
Guest Access	Secure guest access on all APs	
24x7 Monitoring for Premium Security	Supported on the AP 300, AP 650, AP 6511, AP 5131, AP 5181, and AP 7131	
IPSec VPN	Supports DES, 3DES, AES-128 and AES-256 encryption; supports site-to-site and client-to-site* VPN capabilities	
NAC Support	NAC support with third party systems from Microsoft® and Symantec®	
Role-based Wired/Wireless Firewall	Identity based stateful L2-L7 firewall provides protection against DHCP spoofing and ARP cache poisoning	
Geofencing	Location based access provides physical security as an additional parameter to network security	
Motorola Value Adds	Pre-emptive roaming; fast roaming with opportunistic channel scan; load balancing; Power Save Polling (PSP); virtual AP and location-based access control	
Unmatched Reliability		
QoS	Voice prioritization; wireless bandwidth management and user bandwidth contracts; WMM AC; SpectraLink voice prioritization; SIP CAC	
High Availability Networks and Clustering	Supports active-active and active-standby configurations. Ensures high availability networks with single console management that provides multiple levels of redundancy, increased scalability and failover capabilities. Multi-platform license sharing enables deployment of cost-effective networks.	
SMART RF	Self optimizing: dynamically tunes channels and power to eliminate RF and spectrum interference	
WAN Backhaul		3G cellular backhaul for primary access or failover
Adaptive AP with Site Survivability and Mesh	Motorola's adaptive MESH access points (AP51X1 a/b/g and AP 7131 a/b/g/n) can be deployed at remote locations yet centrally managed in the Network Operations Center (NOC) through the RFS 6000 (single controller or a cluster for scalability). An IPSec VPN tunnel secures all traffic between the access points and the wireless controller. Remote Site Survivability (RSS) mesh access points deliver secure uninterrupted wireless service — providing unparalleled resiliency to survive a WAN link outage.	
Load Balancing and AP Steering	Clustering enables not only a high level of redundancy, but also provides a load balanced network for large deployments	
Best Return on Investment (ROI) — and lowest Total Cost of Ownership (TCO)		
Integrated Network Services	PoE switching***, AAA server, DHCP server, intrusion protection-lite, VPN, NAT, wired and wireless firewall — all built-in at no additional cost	
Ease of Installation	Plug-and-play deployments for L2 and L3 save installation time and ongoing maintenance costs	
SMART License Sharing	Clustering capabilities allow for virtual license sharing among switches to provide highly scalable high availability networks	
Services		
Warranty	Hardware — One (1) year; Software — 90 days	
Recommended Services	Service from the Start Advance Exchange Support; Wireless Infrastructure Device Software Support	

* Not supported on the WS 2000; ** Not supported on the RFS 6000 & RFS 7000 ; *** RFS 7000 does not have POE switch ports

Wireless Controllers (continued)

	RFS 4000 Integrated Services Controller
Product Overview	The Motorola RFS 4000 802.11n wireless services controller features Motorola's next generation Wi-NG operating system and integrates wired, wireless and security networking features into a compact and easy-to-use form factor, enabling organizations to create survivable branch networks using a single platform. The RFS 4000 is also available with an integrated dual radio dual band 802.11n access point that features extensive coverage and performance — meeting all the needs of SME/SMB. In addition, the RFS 4000 series offers built in applications such as locationing for Wi-Fi and RFID as well as hotspot and VoWLAN/video services.
General Characteristics	• Supports 6 "thin" 802.11a/b/g/n access points for L2 or L3 deployment per RFS 4000 Controller • Supports mix of 72 AP 300s, AP 6511s, and AP 650s per cluster • Supports adoption of 6 adaptive AP51X1 802.11a/b/g and AP 7131 802.11a/b/g/n access points in adaptive mode per RFS 4000 Controller and 72 per cluster • Supports 24 WLANs with 500 users per controller • Redundancy: Active:Standby; Active:Active and N+1 redundancy with access point and MU load balancing; Critical resource monitoring • 5 POE Plus (802.3at) switch ports,1 Express Card, 1 USB • Supports PCI,HIPAA, and SOX right out of the box
Gap-free Security	
Authentication	Access Control Lists (ACLS); pre-shared keys (PSK); 802.1x/EAP — transport layer security (TLS), tunneled transport layer security (TTLS), protected EAP (PEAP); Kerberos Integrated AAA/RADIUS Server with native support for EAP-TTLS, EAP-PEAP (includes a built in user name/password database; supports LDAP), and EAP-SIM
Encryption	WEP 40/128 (RC4), KeyGuard, WPA—TKIP, WPA2-CCMP (AES), WPA2-TKIP
IDS/IPS	Multi-mode rogue AP detection, rogue AP containment, 802.11n rogue detection, ad-hoc network detection, Denial of Service protection against wireless attacks, client blacklisting, EAP Flood, Fake AP Flood, ID theft, ad-hoc advertising authorized SSID
Guest Access	Secure guest access on AP 300, AP 6511, AP 650, AP 5131, AP 5181, and AP 7131
24x7 Monitoring for Premium Security	Secure guest access on AP 300, AP 6511, AP 650, AP 5131, AP 5181, and AP 7131
IPSec VPN	Supports DES, 3DES and AES-128 and AES-256 encryption, with site-to-site and client-to-site VPN capabilities
NAC Support	NAC support with third party systems from Microsoft and Symantec
Role-based Wired/Wireless Firewall	Role-based wired/wireless firewall with stateful inspection for wired and wireless traffic protects against IP spoofing and ARP cache poisoning
Geofencing	Control or limit network or application access base on a user and their location
Motorola Value Adds	Pre-emptive roaming; fast roaming with opportunistic channel scan; load balancing; Power Save Polling (PSP); Virtual AP and location-based access control
Unmatched Reliability	
QoS	Voice prioritization; wireless bandwidth management and user bandwidth contracts; WMM AC; SpectraLink voice prioritization; SIP CAC
High Availability Networks and Clustering	Supports self-healing
SMART RF	Supports self-healing
WAN Backhaul	Support for 3G wireless cards to backhaul WAN traffic
Adaptive AP with Site Survivability and Mesh	Motorola's adaptive MESH access points (AP51X1 a/b/g and AP 7131 a/b/g/n) can be deployed at remote locations yet centrally managed in the Network Operations Center (NOC) through the RFS X000 (single controller or a cluster for scalability). An IPSec VPN tunnel secures all traffic between the access points and the wireless controller. Remote Site Survivability (RSS) mesh access points deliver secure uninterrupted wireless service — providing unparalleled resiliency to survive a WAN link outage.
Load Balancing and AP Steering	Clustering enables not only a high level of redundancy, but also provides a load balanced network for large deployments
Best Return on Investment (ROI) — and lowest Total Cost of Ownership (TCO)	
Integrated Network Services	PoE switching, AAA server, DHCP server, NAT, wired and wireless firewall, intrusion and rogue protection, and VPN— all built-in at no additional cost
Ease of Installation	Plug-and-play deployments for L2 and L3 saves installation time and ongoing maintenance costs
Services	
Warranty	Hardware — One (1) year; Software — 90 days
Recommended Services	Service from the Start Advance Exchange Support; Wireless Infrastructure Device Software Support

* Not supported on the WS 2000; ** Not supported on the RFS 6000 & RFS 7000

Motorola's wireless LAN portfolio (continued)

Wireless Controllers (continued)

	WS 2000 Wireless Services Controller
Product Overview	A wired/wireless edge gateway, this network-in-a-box is also a PoE switch and router, providing wired/wireless IDS/IPS, a AAA server, an IPSec VPN Gateway, and a stateful firewall with MESH and dynamic RF management capabilities. The complete suite of integrated capabilities combines with support for up to 200 users, providing small to medium enterprises (SMEs) and small to medium branch (SMB) offices with a 'one stop shop' — and a phenomenally low TCO.
General Characteristics	• Supports up to 6 AP 300 802.11a/b/g access points • Supports up to 8 WLANs • Supports up to 200 users • Secure Guest Access • Redundancy: Active-Standby • PCI/HIPAA/SOX capable out-of-the-box
Gap-free Security	
Authentication	Access Control Lists (ACLS); pre-shared keys (PSK); 802.1x/EAP — transport layer security (TLS), tunneled transport layer security (TTLS), protected EAP (PEAP); Kerberos integrated AAA/RADIUS server with native support for EAP-TTLS, EAP-PEAP (includes a built in user name/password database and supports LDAP).
Encryption	WEP 40/128 (RC4), KeyGuard, WPA—TKIP, WPA2-CCMP (AES), WPA2-TKIP
IDS/IPS	Multi-mode rogue AP detection; rogue AP containment; Denial of Service protection against wireless attacks; client blacklisting; anomaly analysis engine; wired IPS**
Guest Access	Secure guest access on AP 300, AP 5131, and AP 5181
24x7 Monitoring for Premium Security	Secure guest access on AP 300, AP 5131, and AP 5181
IPSec VPN	Supports DES, 3DES, AES-128 and AES-256 encryption; supports site-to-site and client-to-site* VPN capabilities
NAC Support	None
Role-based Wired/Wireless Firewall	Stateful packet filtering firewall
Geofencing	Control or limit network or application access base on a user and their location
Motorola Value Adds	Pre-emptive roaming; fast roaming with opportunistic channel scan; load balancing; Power Save Polling (PSP); Virtual AP and location-based access control is under the RFS 4000 and the WS 2000
Unmatched Reliability	
QoS	Voice prioritization; wireless bandwidth management and user bandwidth contracts; WMM AC; SpectraLink® voice prioritization; SIP CAC
High Availability Networks and Clustering	Supports active-active and active-standby configurations. Ensures high availability networks with single console management that provides multiple levels of redundancy, increased scalability and failover capabilities. Multi-platform license sharing enables deployment of cost-effective networks
SMART RF	Self optimizing: dynamically tunes channels and power to eliminate RF and spectrum interference
WAN Backhaul	None
Adaptive AP with Site Survivability and Mesh	Supports Wireless Bridging with AP51X1 — can MESH with Motorola's adaptive access points to extend the network
Load Balancing and AP Steering	Clustering enables not only a high level of redundancy, but also provides a load balanced network for large deployments
Best Return on Investment (ROI) — and lowest Total Cost of Ownership (TCO)	
Integrated Network Services	PoE switching, AAA server, DHCP server, NAT, wired and wireless firewall, intrusion and rogue protection, and VPN— all built-in at no additional cost
Ease of Installation	Plug-and-play deployments for L2 and L3 save installation time and ongoing maintenance costs
Services	
Warranty	Hardware — One (1) year; Software — 90 days
Recommended Services	Service from the Start Advance Exchange Support; Wireless Infrastructure Device Software Support

Access Points

	AP 300 Access Point	AP 5131 Access Point	AP 5181 Outdoor Access Point
Product Overview	Working in conjunction with Motorola's wireless controllers, the AP 300 Access Point (AP) delivers robust and feature rich IEEE 802.11a/b/g connectivity. Adoptable as either a Layer 2 or Layer 3 device, the AP 300 can also be utilized as a sensor in conjunction with Motorola's Wireless Intrusion Protection System (IPS). Two models offer greater mounting flexibility: an internal antenna model designed for the carpeted space and an external antenna model that can be mounted above ceiling tiles.	The AP 5131 802.11a/b/g adaptive access point offers enterprise-class wired and wireless networking and security features for small to medium businesses and enterprise small branch office locations. The 24x7 dual-band WIPS sensing and mesh networking combine to deliver gap-free security and the cost-effective extension of the corporate network in difficult-to-cable areas.	Motorola's AP 5181 outdoor 802.11a/b/g adaptive access point delivers enterprise class access wireless networking in harsh environments. Support of MESH networking enables rapid and inexpensive deployment in difficult-to-cable areas
General Specifications	• 802.11a/b/g • Dual and single radio options • 802.3af Power over Ethernet (PoE) • Plenum-rated external antenna model • Operating temperature: Internal antenna model — 32°F to 104°F/0°C to 40°C External antenna model — -4°F to 122°F/-20°C to 50°C	• 802.11a/b/g; DSSS and OFDM • Dual and single radio options • 802.3af Power-over-Ethernet (PoE) • Mesh networking • Adaptive AP support (enables adoption of Motorola adaptive access points) • Plenum-rated housing • Up to 127 devices supported • -4°F to 122°F/-20°C to 50°C • Desktop; wall; above drop and under-ceiling • Standalone, dependent or adaptive	• 802.11a/b/g; DSSS and OFDM • Dual and single radio options • 802.3af Power-over-Ethernet (PoE) • Mesh networking • Adaptive AP support (enables adoption of Motorola adaptive access points) • Plenum-rated housing; IP56; NEMA 4X • Up to 127 devices supported • -22°F to 131°F/-30°C to 55°C • Mounts on wall or pole
Gap-free Security			
24x7 Wireless IPS Sensing	Supports gap-free security with WS 2000, RFS 4000, RFS 6000 and RFS 7000 Wireless Controllers, including 24x7 dedicated WIPS sensor	Supports gap-free detection and security with 24x7 dual band WIPS sensing and concurrent client access	
Authentication		Pre-shared keys (PSK); 802.1x/EAP - transport layer security (TLS); tunneled transport layer security (TTLS); protected EAP (PEAP)	
Encryption		WEP 40M28 (RC4); WPA-TKIP; WPA2-CCMP (AES); 802.11i WPA2	
Guest Access		Secure guest access with onboard or external RADIUS authentication	
IPSec VPN		Supports DES, 3DES, AES-128 and AES-256 encryption; supports site-to-site VPN capabilities	
Stateful Firewall		Stateful packet filtering wireless firewall; Access Control Lists	
PCI		Out-of-the-box PCI capable	
Unmatched Reliability			
Failover Adaptive Network Services at the Edge	Supports unmatched reliability in dependent access point mode in conjunction with WS 2000, RFS 4000, RFS 6000 and RFS 7000; does not offer stand-alone or adaptive network services	Layer 3 routing; 802.1Q VLAN trunking and tagging; AAA Server; DHCP services; Dyn DNS; PPPoE	
QoS		Voice prioritization; WMM; WMM uAPSD; 802.1p; DiffServ/TOS	
Mesh Networking		Stand-alone MESH; Adaptive MESH; self-healing MESH failover; Layer 2 wired MESH failover	
Adaptive AP with Site Survivability		Full featured Access Point for local or remote edge deployments is centrally managed by controller with Remote Site Survivability (RSS) options and full network and security services at the edge	
WAN Connectivity/Failover		Dual Gigabit Ethernet for LAN/WAN connectivity and WAN failover options	
3G WAN Backhaul		N/A	
Best Return on Investment (ROI) — and lowest Total Cost of Ownership (TCO)			
Integrated Network Services w/ Network-in-a-Box	Low total cost of ownership	Routing, security and network services integration eliminates point products and appliances, saving significant capex and opex	
802.3af Dual Radio High Performance		Eliminates costly upgrades to PoE infrastructure	
Mesh Networking		Eliminates expensive PoE infrastructure in greenfield deployments and cost of cabling in hard-to-cable areas	
Easy to Provision and Deploy		Takes up to 75% less time to configure than comparable enterprise AP offerings in the market, reducing deployment and management overhead	
Single Platform with Adaptive ID for all environments		Industrial grade design with adaptive facade provides one platform with a single firmware to manage for all environments (carpeted or rugged) and all scenarios (campus, edge, remote deployments in standalone or adaptive mode), reducing complexity and overhead of deployment	
Services			
Warranty	Hardware — 1 Year; Software — 90 days	Hardware — One (1) year; Software — 90 days	
Recommended Services	Service from the Start Advance Exchange Support	Service from the Start Advance Exchange Support; Wireless Infrastructure Device Software Support	

Motorola's wireless LAN portfolio (continued)

Access Points (continued)

	AP 650 Access Point	AP 7131 Adaptive Access Point
Product Overview	The AP 650 is a thin (dependent) multipurpose 802.11a/b/g/n access point designed to lower the cost of deploying and operating a secure, reliable 802.11n wireless LAN (WLAN) in branch offices or headquarters facilities. The AP 650 offers simultaneous WLAN access and sensing enabling remote over-the-air helpdesk support, or wireless intrusion prevention. Either of the two radios can be used as a dual-band security or troubleshooting sensor, either fixed repurposed in real time.	The AP 7131 is the industry's first high performance 802.11a/b/g/n adaptive access point that cost-effectively delivers secure and resilient network services and enables high performance mobility applications in a wireless enterprise. The AP 7131 in a stand-alone or switch-managed adaptive mode provides 24x7 dedicated dual-band wireless IPS sensing, high speed client access for data, voice and video and mesh networking. This integrated network-in-a-box delivers gap-free security services, unmatched reliability and high performance at the industry's lowest TCO.
General Specifications	• 802.11a/b/g/n; DSSS and OFDM • Dual or single radio options • 802.3af Power-over-Ethernet (PoE) • Plenum-rated housing option • -4°F to 122° F/0°C to 50° C • Wall, above drop and under-ceiling • Powerful 24 dBm radios • Use any radio as dual-band sensor • Dual-band (band unlocked) radios for concurrent 2.4 and 5.0 gHz sensing	• 802.11a/b/g/n; DSSS and OFDM • Tri, dual and single radio options • 802.3af and 802.3at Power over Ethernet (PoE) • MESH networking • Adaptive AP support (enables adoption of Motorola adaptive access points) • Plenum-rated housing option • Up to 127 devices supported • -4°F to 122°F/-20°C to 50°C • Desktop; wall; above drop and under-ceiing • Use any radio as dual-band sensor (put it under the Tri, dual, or single radio options) • Dual-band (band unlocked) radios for concurrent 2.4 and 5.0 gHz sensing • Powerful 27.7dBm radios • Standalone, dependent or adaptive
Gap-free Security		
24x7 Wireless IPS Sensing	Supports gap-free security with RFS 4000, RFS 6000 and RFS 7000 Wireless Controllers, including 24x7 dedicated WIPS sensor	Supports gap-free detection and security with 24x7 dual band WIPS sensing and concurrent client access
Authentication		Pre-shared keys (PSK); 802.1x/EAP – transport layer security (TLS); tunneled transport layer security (TTLS); protected EAP (PEAP)
Encryption		WEP 40M28 (RC4); WPA-TKIP; WPA2-CCMP (AES); 802.11i WPA2
Guest Access		Secure Guest Access with onboard or external RADIUS authentication
IPSec VPN		Supports DES, 3DES, AES-128 and AES-256 encryption; supports site-to-site VPN capabilities
Stateful Firewall		Stateful Layer 3 packet inspection; Stateful L2-L7 wireless firewall available in Adaptive AP mode with Wi-NG platforms; Access Control Lists
PCI		Out-of-the-box PCI capable
Unmatched Reliability		
Failover Adaptive Network Services at the Edge	Supports unmatched reliability in dependent access point mode in conjunction with RFS 4000, RFS6000 and RFS7000; does not offer stand-alone or adaptive network services	Layer 3 routing; 802.1Q VLAN trunking and tagging; AAA Server; DHCP services; Dyn DNS; PPPoE
QoS		Voice prioritization; WMM; WMM uAPSD; 802.1p; DiffServ/TOS
Mesh Networking		Stand-alone MESH; adaptive MESH; self-healing MESH failover; layer 2 wired MESH failover
Adaptive AP with Site Survivability		Full featured access point for local or remote edge deployments is centrally managed by controller with Remote Site Survivability (RSS) options and full network and security services at the edge
WAN Connectivity/Failover		Dual Gigabit Ethernet for LAN/WAN connectivity and WAN failover options
3G WAN Backhaul		3G backhaul or failover
Best Return on Investment (ROI) — and lowest Total Cost of Ownership (TCO)		
Integrated Network Services w/ Network-in-a-Box	Low total cost of ownership	Routing, security and network services integration eliminates point products and appliances, saving significant capex and opex
802.3af Dual Radio High Performance		Eliminates costly upgrades to PoE infrastructure
Mesh Networking		Eliminates expensive PoE infrastructure in greenfield deployments and cost of cabling in hard-to-cable areas
Easy to Provision and Deploy		Takes up to 75% less time to configure than comparable enterprise AP offerings in the market, reducing deployment and management overhead
Single Platform with Adaptive ID for all environments		Industrial grade design with adaptive facade provides one platform with a single firmware to manage for all environments (carpeted or rugged) and all scenarios (campus, edge, remote deployments in standalone or adaptive mode), reducing complexity and overhead of deployment
Services		
Warranty	Hardware — One (1) year; Software — 90 days	
Recommended Services	Service from the Start Advance Exchange Support; Wireless Infrastructure Device Software Support	

Access Points (continued)

	AP 7181 Mesh Wide Area Network Access Point
Product Overview	The AP 7181 is a high performance outdoor 802.11n access point. It serves the needs of municipalities, enterprises and public safety, offering superior network capacity with a data rate of 300 Mbps. Motorola's ADEPT (ADvanced Element Panel Technology) antenna system, developed exclusively for the AP 7181, provides an integrated MIMO (Multiple Input, Multiple Output) and software adjustable panel antenna system that features dual polarization and avoids notching and shadowing coverage problems associated with multi-stick solutions. The AP 7181 works with the Motorola WLAN 802.11n access point portfolio to provide seamless indoor/outdoor coverage.
General Specifications	• 802.11a/b/g/n OFDM, 802.11b - DSS • Dual radio • Integrated 802.3af Power Over Ethernet (PoE) out • Mesh networking • IP67 rated, corrosion resistant enclosure • ASTM B117 salt, fog, and rust resistance and wind survivability> 160 mph • Operating: -40 to +55 °C • Storage: -40 to +85 °C • Humidity: 5 to 95 % RH non-condensing • Maximum Transmit Power for 802.11b/g/n Radio: 36 dBm EIRP (Transmit power may vary based upon the deployed country.) Adjustable in 1 dB increments • Maximum Transmit Power for 802.11a/n Radio: 32 dBm EIRP (Transmit power may vary based upon the deployed country.) Adjustable in 1 dB increments
Gap-free Security	
Client Security	WPA, WPA2-PSK, WEP, 802.11i, RADIUS, 802.1X (includes EAP-TLS, EAP-TTLS)
Encryption	WEP, AES-CCM, TKIP
Intra-Mesh Encryption	Secure Mesh with AES
Authentication	802.1x (Infrastructure/Client) and MAC address hardware authentication
Unmatched Reliability	
Failover Adaptive Network Services at the Edge	Layer 2 based routing providing greater performance and less overhead
QoS	802.11e QoS
Mesh Networking	Multi-Radio mesh allows meshing on each radio
Best Path Selection	Automatic neighbor detection and route determination
Session Resilience	Self-healing enabled by dynamic path selection
Best Return on Investment (ROI) — and lowest Total Cost of Ownership (TCO)	
Integrated Network Services w/ Network-in-a-Box	The AP 7181 offers robust data connections throughout the network by leveraging Motorola's leading routing technology, MeshConnex™. which provides efficient routing, low hop latency, low routing overhead, high-speed handoffs and proven scalability. The Opportunistic Radio Link Adaptation (ORLA) is a key decision-making element within MeshConnex™, designed to select data rates that will provide the best throughput at any given time. ORLA helps ensure customers using a Motorola Mesh Wide Area Network enjoy sustained throughput at the highest possible data rate. The electronic down-tilt can be remotely adjusted up or down 15 degrees via the AP 7181 web console, saving the time and expense required to adjust fixed antenna beam patterns, and secure bucket trucks and technician labor to facilitate antenna replacement.
802.3af Dual Radio High Performance	
Mesh Networking	
Easy to Provision and Deploy	
Single Platform with Adaptive ID for all environments	
Services	
Warranty	Hardware — One (1) year on hardware, parts and software
Recommended Services	Service from the Start Advance Exchange Support; Wireless Infrastructure Device Software Support

Motorola's wireless LAN portfolio (continued)

Wallplate Access Points

	MC 802 Wallplate Access Point	AP 6511 802.11n Wallplate Access Point
Product Overview	The Motorola MC 802 Wallplate access point is a plug and play wireless 802.11 b/g access point powered over analog telephone wires. The MC 802 enables the fast and easy extension of WLAN coverage to multiple dwelling units (MDU) such as hotels, hospitals, dormitories and barracks where installing Ethernet cabling is difficult and expensive. The MC 802 can be installed over any telephone jack that uses only a single pair of wire for backhaul. The solution includes the T3 PowerBroadBand Switch which provides adaptive line power for up to 25 MC 802 Wallplate access points.	Designed to 'hide in sight', the AP 6511 is a sleek and slim access point that can be installed in minutes over any category 5 or 6 structured wiring plate. It features an 802.11n radio, plus the modularity to easily snap-on three to four additional switched Ethernet ports or use the keystone port to snap-on any standard connector such as RJ11, RJ45, COAX f-connector and more. Designed to meet the wireless and wired needs of multi-dwelling units such as hotels, long-term healthcare, and dormitories. Native controller software enables one AP to provide control for 25 AP 6511s. AP 6511s can be adopted and controlled by a Motorola RFS controller. The AP 6511 packs enterprise wireless features and modular add-ons into a deceptively simple design.
General Specifications	• Each MC 802 Wallplate Access Point includes one 802.11b/g radio, two 10/100Mb ports, and one pass-through analog telephone port for POTS (plain old telephone service). Operates up to 1,000 ft (300 m) from the T3 PowerBroadBand Switch over single copper wire pair. • T3 PowerBroadBand is a 25 port Switch with 25 downstream UTP ports and 2 GigE uplink Ethernet ports. Each port provides Motorola's patented Adaptive Line Power (ALP) which delivers operating power to the MC 802 overanalog telephone service at line rates up-to 75 Mbps down and 10 Mbps up.	• 802.11a/b/g/n; DSSS and OFDM • Single radio (Field select 2.4, 5.0 or dual-band sensor) • 802.3af Power-over-Ethernet (PoE) • Single hop mesh (available post Rev-A) • Adaptive AP support (available post Rev-A) • -0°F to 104°F/-20°C to 40°C • Wall plate, desk, wall mount • 20dBm radio, 2x2 MIMO • Integrated controller software for 25 AP 6511s
Gap-free Security		
24x7 Wireless IPS Sensing	Secure management access to the MC 802 Wireless Wallplate through the T3 PowerBroadband Switch. Port and client isolation is guaranteed by a hierarchical VLAN topology that begins at the MC 802 and continues through the connected T3 PowerBroadband Switch. Security features include ACLs and wireless encryption standards from WEP to WPA2/TKIP/AES Enterprise. Support for EAP types includes TLS, TTLS, PEAPv0 and MD5.	Can be adopted for opportunistic sensing or dedicated 24x7 dual-band sensing
Authentication		Pre-shared keys (PSK); 802.1x/EAP – transport layer security (TLS); tunneled transport layer security (TTLS); protected EAP (PEAP)
Encryption		WEP 40M28 (RC4); WPA-TKIP; WPA2-CCMP (AES); 802.11i WPA2
Guest Access		802.1x authentication on all wireless and wired interfaces via external RADIUS or Motorola RF Controller
IPSec VPN		Not required
Stateful Firewall		Layer 2 and 3 packet inspection; Access Control Lists
PCI		Not required
Unmatched Reliability		
Failover Adaptive Network Services at the Edge	An easy to use Web-based management interface combines with continuous RF monitoring, peak performance graphs and a self-healing WLAN for the unmatched reliability required to deliver dependable high network availability.	L3 routing; 802.1Q VLAN trunk and tagging; DHCP server
QoS		Voice prioritization; WMM; WMM uAPSD; 802.1p; DiffServ/TOS
Mesh Networking		Standalone and adaptive Mesh available post Rev-A
Adaptive AP with Site Survivability		Full featured access point for local or remote edge deployments is centrally managed by controller with Remote Site Survivability (RSS) options and full network and security services at the edge; post Rev-A
WAN Connectivity/Failover		Single 10/100Mb uplink Ethernet port
3G WAN Backhaul		None
Best Return on Investment (ROI) — and lowest Total Cost of Ownership (TCO)		
Integrated Network Services w/ Network-in-a-Box	Each access point installs in minutes without the need for pulling cable or adding POE switch ports. The access points are located inside each MDU room, which avoids the radio frequency thwarting perimeter wall. Coverage is increased without AP-to-AP interference — reducing the number of required access points.	Basic routing, security and network services. Connect to RF Controller for additional features and more granular control
802.3af Dual Radio High Performance		N/A
Mesh Networking		Single hop Mesh
Easy to Provision and Deploy		Designed for rapid installation and fast configuration. Significant cost savings in deployment and operations
Services		
Warranty	Hardware — One (1) year; Software — 90 days	Hardware — One (1) year; Software — 90 days
Recommended Services	Service from the Start Advance Exchange Support; Wireless Infrastructure Device Software Support	Service from the Start Advance Exchange Support; Wireless Infrastructure Device Software Support

Bridges and Client Adapters

	CB 3000 Wireless Bridge	LA 5127/LA 5137 Client Adapters
Product Overview	The CB 3000 provides robust, enterprise-class wireless connectivity for Ethernet-enabled devices such as printers, scales and point-of-sale equipment without card slots or native wireless capabilities.	Optimized for embedded mobile applications, these CompactFlash cards deliver the power of wireless connectivity to enterprise devices and industrial equipment.
WLAN	• 802.11a/b/g	• LA 5127: 802.11b/g (Single internal antenna configuration) • LA 5137: 802.11a/b/g (Dual external antenna connector configuration)
Security	• WEP 40/128 • WPA and AES encryption • 802.1x support with PEAP • EAP/TLA • EAP/TTLS authentication	• WEP • WPA/WPA2 • EAP-TLS • EAP-TLS/MSCHAPv2 • PEAPv0/EAP-MSCHAPv2 • PEAPv1/EAP-GTC • EAP-SIM (802.1x)
Features	• Work group bridge with support for up to 16 client devices • Point-of-Sale support for IBM, NEC and others • Ad hoc mode (CB 3000 to CB 3000) for easy sharing of printers and other peripherals • Embedded secure web server for anywhere, anytime management • SNMP v2 support for easy integration with standard management systems	• Robust security for Linux and Windows applications • CompactFlash type I/II form factor with 16-bit PC card interface • Upgradable hard MAC with on-card memory • Comprehensive software development kit for OEM products • Worldwide regulatory approval backed by Motorola service and support
Warranty	Hardware — One (1) year; Software — 90 days	Hardware — One (1) year; Software — 90 days
Recommended Services	• Service from the Start Advance Exchange Support • Wireless Infrastructure Device Software Support	• Service from the Start — Bronze

Multi-vendor Management for Network, Security and Assurance

Motorola's powerful set of management applications enables administrators to easily execute end-to-end design and management of wireless LANs.

Motorola LANPlanner®

Rapid and accurate design of high performance wireless networks. Ensure that your wireless LAN is designed to deliver maximum performance and value with Motorola LANPlanner — regardless of whether you are adding a new wireless LAN, expanding an existing wireless network or need to plan your migration to an 802.11n network. This comprehensive tool enables the design and deployment of wireless networks that meet the specific capacity, reliability and performance requirements in your environment. The ability to predict and visualize the impact of construction materials, network usage and the potential impact of co-channel interference enables the rapid design of wireless networks that provide superior wireless performance, superior quality of service (QoS) — and superior total cost of ownership (TCO). Post deployment reporting enables validation that the network is performing to expectations.

AirDefense Services Platform

The AirDefense Services Platform (ADSP) offers seamless integration of a 24x7 Wireless Intrusion Prevention System (WIPS) with built-in compliance reporting, multi-vendor WLAN infrastructure management, as well as a full-suite of network assurance tools designed to centrally troubleshoot user connectivity issues and fix WLAN performance problems. The AirDefense Services Platform is the industry's first comprehensive service oriented platform that can be leveraged by enterprise IT to dramatically reduce the TCO and achieve quicker ROI from their WLAN. The platform provides organizations with a cost effective and simplified way to fully customize their wireless management and monitoring solutions to meet organizational needs or industry requirements. Solutions offered under the platform include:

The AirDefense Security & Compliance Solution

The AirDefense Security and Compliance solution provides complete protection against wireless threats, policy compliance monitoring, robust performance monitoring, and location tracking that can scale to meet the largest global organizations' needs. Powered by the industry's most advanced intrusion detection system (IDS) engines, the solution allows users to identify hackers, network attacks and vulnerabilities, and to instantly terminate the connection to any rogue device. The system uses collaborative intelligence with secure sensors that work in tandem with a hardened purpose-built server appliance to monitor all 802.11 (a/b/g/n) wireless traffic in real time. The innovative add-on modules integrated in the Security & Compliance Solution include:

- **Wireless Intrusion Prevention** — Provides comprehensive detection and prevention of wireless intrusion attempts by analyzing existing and day-zero threats in real-time against historical data. The system is able to accurately detect all wireless attacks and anomalous behavior and can automate responses to mitigate threats.
- **Wireless Vulnerability Assessment** — Patented technology that provides remote wireless security testing using AirDefense sensors. Using this tool circumvents the need to send personnel or consultants to remote offices or stores to manually conduct testing.
- **Advanced Forensics** — Stores and manages hundreds of data points for every wireless device on the network, allowing administrators to rewind and review detailed records of wireless activity that can assist in a forensic investigation.
- **Mobile Workforce Protection** — Protects the mobile workforce (inside or outside the corporate network) from the wireless-specific risks that could expose private data and confidential transactions. Enforces corporate polices for all types of wireless networks, including Wi-Fi, EVDO, 3G, GPRS and many more.
- **Legacy Encryption Protection** — Patented technology that provides protection for wireless infrastructure secured by legacy encryption protocols.

The AirDefense Infrastructure Management Solution

The AirDefense Infrastructure Management solution offers centralized management and control for the wireless enterprise — a single console for multi-vendor, multi-architecture, multi-generation and multi-version WLAN management. The solution's vendor and device agnostic user interface ensures consistency in configuration, compliance with policies, while reducing device and model specific expertise required by network administrators. Instead of managing multiple systems, administrators have a centralized management console to update device configurations and firmware, monitor device status, capture faults, audit and automatically correct device configuration issues, gather network statistics, generate trend and compliance reports, etc. The innovative add-on modules integrated in the AirDefense Network Assurance suite include:

- **WLAN Management** — Provides administrators with a single, centralized console for muti-vendor deployments, simplifying management and providing consistent configuration across the network. This tool will enhance the visibility and control of wireless infrastructure for organizations with diverse WLAN deployments consisting of multiple vendors and equipment models.
- **Centralized Management Console** — Provides administrators and IT staff a single holistic view into the wireless network. For large scale deployments which require thousands of sensors and/or tens of thousands of managed devices, the CMC provides aggregated views of the data on multiple appliances and a single point for configuration changes.

The AirDefense Network Assurance Solution

The AirDefense Network Assurance solution offers a unique set of tools for vendor agnostic, WLAN performance monitoring and remote troubleshooting of RF problems. The solution uses a dedicated network of RF sensors that continuously monitor the airwaves — intelligently scanning different frequencies over time and space to detect WLAN performance problems and policy violations. The remote sensors serve as the "eyes and ears" of the WLAN, observing network behavior 24x7 and allowing an administrator to "look into" a wireless issue from any location with network access. Motorola analyzes traffic flow to interpret WLAN performance and to identify common characteristics that may impede network performance such as interference from neighboring WLANs, channel overlap, over-utilized APs & channels, network congestion, and performance degradation. By providing a view of all WLAN traffic, the Network Assurance tools enable network administrators to remotely troubleshoot problems, identify and respond to network mis-configurations, and monitor network availability. The innovative add-on modules integrated in the AirDefense Network Assurance suite include:

- **Advance Troubleshooting** — Performs expert analysis of wireless connectivity issues and performs end-to-end network testing from the wireless perspective. The tool allows administrators to perform both client connectivity troubleshooting and access point connectivity testing across the entire WLAN, remotely using AirDefense sensors or Motorola access points.
- **Spectrum Analysis** — The industry's first software only SA solution that can remotely view the physical layer of an enterprise WLAN using distributed sensors (without requiring specialized hardware). The tool allows network administrators to identify and classify possible sources of interference in the 2.4 and 5 GHz WLAN frequency bands.
- **LiveRF** — Provides a remote assessment of network coverage and real time visualization of the wireless network. Administrators can view live heat maps to help understand the current coverage and impact of network changes and interferences sources.
- **Advanced Forensics** — Provides administrators with a detailed view of wireless activity. Real-time views or historical records of activity are used to remotely troubleshoot problems or proactively improve network performance.

AirDefense Mobile

AirDefense Mobile is a laptop based solution that gives enterprises a mobile product that provides a real-time snapshot of all WLAN infrastructure and activity (802.11 a/b/g/n). With over 175 alarms, Mobile provides the most advanced mobile security tool in the market today. The tool provides wireless device inventory, threat index analysis, location tracking, advanced rogue management and automated protection. A flexible notification engine ensures that critical alerts are communicated in a timely manner. Use Mobile to locate rogue access points and stations, identify mis-configured devices and to take proactive steps to close any security holes as part of a WLAN policy compliance program. Mobile also provides diagnostic tools and signal interference measurements for network troubleshooting thereby ensuring the health of the wireless LAN.

AirDefense Mobile has a simple intuitive user interface and along with the Services Platform, provides a comprehensive view of the wireless network security and health. The mobile analyzer is fully integrated into the AirDefense Services Platform, enabling synchronization of authorized and rogue wireless devices for a specified location. Hence, Mobile is an essential security and network management tool that gives IT professionals a holistic view into their wireless network and provides everything they need to quickly resolve any network issues and mitigate threats.

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